WHAT IS CLAIMED IS:

1. An information processing method of receiving encoded image data compression-coded for each tile and encrypting the encoded image data, characterized by comprising:

repeatedly forming one tile group from a plurality of adjacent tiles and another tile group from a plurality of adjacent tile groups so as to define a hierarchical structure of the tiles and tile groups, and for a plurality of partial encoded data that constitute encoded data of a tile located at a terminal of the hierarchical structure, arranging the partial encoded data toward the terminal in ascending order of priority in decryption so as to define a tree structure that nodes the respective tile groups, the respective tiles, and the respective partial encoded data;

generating encryption key information for a node located at an uppermost layer of the tree structure for an entire image expressed by the encoded image data;

executing, up to a node located at the terminal, processing for generating encryption key information for a node of interest on the basis of encryption key information generated for a node located at an upper layer;

when a designation input is given to define, as an object to be encrypted, a desired node position in nodes of the partial encoded data in the tree

structure, setting, as an object to be encrypted, partial encoded data which is located at a higher layer and contains partial encoded data at the node position that is defined by the designation input; and

executing encryption processing for each partial encoded data, which is set as an object to be encrypted, by using an encryption key generated for the partial encoded data and outputting the encrypted partial encoded data and unencrypted partial encoded data.

2. The method according to claim 1, characterized in that the encryption key information is generated using a function which has a one-way direction from the upper layer to a lower layer.

3. The method according to claim 2, characterized in that the function generates the key information by using coordinate position information of a tile group, a tile, or partial encoded data located at the lower layer.

4. The method according to claim 1, characterized in that the encryption key information of the uppermost layer is output to a predetermined authentication server on the Internet.

5. The method according to claim 1, characterized in that

the method further comprises a step of displaying the received encoded data as a hierarchical structure

of tiles, tile groups, and partial encoded data, and

the desired partial encoded data of the desired layer is designated from the hierarchical structure displayed in the display step.

6. An information processing apparatus for receiving encoded image data compression-coded for each tile and encrypting the encoded image data, characterized by comprising:

means for repeatedly forming one tile group from a plurality of adjacent tiles and another tile group from a plurality of adjacent tile groups so as to define a hierarchical structure of the tiles and tile groups, and for a plurality of partial encoded data that constitute encoded data of a tile located at a terminal of the hierarchical structure, arranging the partial encoded data toward the terminal in ascending order of priority in decryption so as to define a tree structure that nodes the respective tile groups, the respective tiles, and the respective partial encoded data;

means for generating encryption key information for a node located at an uppermost layer of the tree structure for an entire image expressed by the encoded image data;

means for executing, up to a node located at the terminal, processing for generating encryption key information for a node of interest on the basis of

encryption key information generated for a node located at an upper layer;

means for, when a designation input is given to define, as an object to be encrypted, a desired node position in nodes of the partial encoded data in the tree structure, setting, as an object to be encrypted, partial encoded data which is located at a higher layer and contains partial encoded data at the node position that is defined by the designation input; and

means for executing encryption processing for each partial encoded data, which is set as an object to be encrypted, by using an encryption key generated for the partial encoded data and outputting the encrypted partial encoded data and unencrypted partial encoded data.

7. A computer program which causes a computer that reads and executes the program to function as an information processing apparatus for receiving encoded image data compression-coded for each tile and encrypting the encoded image data, characterized by comprising:

means for repeatedly forming one tile group from a plurality of adjacent tiles and another tile group from a plurality of adjacent tile groups so as to define a hierarchical structure of the tiles and tile groups, and for a plurality of partial encoded data that constitute encoded data of a tile located at a

terminal of the hierarchical structure, arranging the partial encoded data toward the terminal in ascending order of priority in decryption so as to define a tree structure that nodes the respective tile groups, the respective tiles, and the respective partial encoded data;

means for generating encryption key information for a node located at an uppermost layer of the tree structure for an entire image expressed by the encoded image data;

means for executing, up to a node located at the terminal, processing for generating encryption key information for a node of interest on the basis of encryption key information generated for a node located at an upper layer;

means for, when a designation input is given to define, as an object to be encrypted, a desired node position in nodes of the partial encoded data in the tree structure, setting, as an object to be encrypted, partial encoded data which is located at a higher layer and contains partial encoded data at the node position that is defined by the designation input; and

means for executing encryption processing for each partial encoded data, which is set as an object to be encrypted, by using an encryption key generated for the partial encoded data and outputting the encrypted partial encoded data and unencrypted partial encoded

data.

8. A computer-readable storage medium characterized by storing the computer program of claim 7.

9. An information processing method of receiving information containing encoded data of both encrypted and unencrypted tiles and reproducing an image, characterized by comprising:

repeatedly forming one tile group from a plurality of adjacent tiles and another tile group from adjacent tile groups on the basis of the received information so as to define a hierarchical structure of the tile groups, and for a plurality of partial encoded data that constitute encoded data of a tile located at a terminal of the hierarchical structure, arranging the partial encoded data toward the terminal in ascending order of priority in decryption so as to define a tree structure that nodes the respective tile groups, the respective tiles, and the respective partial encoded data;

receiving key information to be used to decrypt a tile containing encrypted partial encoded data;

sequentially generating information up to desired partial encoded data located at a lower layer of a tile of interest on the basis of the received key information of the tile; and

decrypting each encrypted partial encoded data by using the key information generated for each partial

encoded data.

10. An information processing apparatus for receiving information containing encoded data of both encrypted and unencrypted tiles and reproducing an image, characterized by comprising:

means for repeatedly forming one tile group from a plurality of adjacent tiles and another tile group from adjacent tile groups on the basis of the received information so as to define a hierarchical structure of the tile groups, and for a plurality of partial encoded data that constitute encoded data of a tile located at a terminal of the hierarchical structure, arranging the partial encoded data toward the terminal in ascending order of priority in decryption so as to define a tree structure that nodes the respective tile groups, the respective tiles, and the respective partial encoded data;

means for receiving key information to be used to decrypt a tile containing encrypted partial encoded data;

means for sequentially generating information up to desired partial encoded data located at a lower layer of a tile of interest on the basis of the received key information of the tile; and

means for decrypting each encrypted partial encoded data by using the key information generated for each partial encoded data.

11. A computer program which causes a computer that reads and executes the program to function as an information processing apparatus for receiving information containing encoded data of both encrypted and unencrypted tiles and reproducing an image, characterized by comprising:

means for repeatedly forming one tile group from a plurality of adjacent tiles and another tile group from adjacent tile groups on the basis of the received information so as to define a hierarchical structure of the tile groups, and for a plurality of partial encoded data that constitute encoded data of a tile located at a terminal of the hierarchical structure, arranging the partial encoded data toward the terminal in ascending order of priority in decryption so as to define a tree structure that nodes the respective tile groups, the respective tiles, and the respective partial encoded data;

means for receiving key information to be used to decrypt a tile containing encrypted partial encoded data;

means for sequentially generating information up to desired partial encoded data located at a lower layer of a tile of interest on the basis of the received key information of the tile; and

means for decrypting each encrypted partial encoded data by using the key information generated for

each partial encoded data.

12. A computer-readable storage medium characterized by storing the computer program of claim 11.

13. A processing method of a server which is connected to a network for providing a decryption key for an image containing encoded data of both encrypted and unencrypted tiles, characterized by comprising:

for a plurality of partial encoded data that constitute encoded data of a tile, arranging the partial encoded data toward a terminal in ascending order of priority in decryption, and storing basic decryption key information located at an uppermost layer of the image which has a hierarchical structure constructed by repeatedly forming one tile group from a plurality of adjacent tiles and another tile group from adjacent tile groups; and

when information that designates partial encoded data to be decrypted is received from a client on the network, sequentially deriving decryption key information from the basic decryption key to a lower layer until reaching the designated partial encoded data of the designated layer and, when decryption key information for the corresponding partial encoded data is generated, notifying the client of the decryption key information.

14. A server which is connected to a network for providing a decryption key for an image containing

encoded data of both encrypted and unencrypted tiles, characterized by comprising:

means for, for a plurality of partial encoded data that constitute encoded data of a tile, arranging the partial encoded data toward a terminal in ascending order of priority in decryption, and storing basic decryption key information located at an uppermost layer of the image which has a hierarchical structure constructed by repeatedly forming one tile group from a plurality of adjacent tiles and another tile group from adjacent tile groups; and

means for, when information that designates partial encoded data to be decrypted is received from a client on the network, sequentially deriving decryption key information from the basic decryption key to a lower layer until reaching the designated partial encoded data of the designated layer and, when decryption key information for the corresponding partial encoded data is generated, notifying the client of the decryption key information.

15. A computer program which causes a computer that reads and executes the program to function as a server which is connected to a network for providing a decryption key for an image containing encoded data of both encrypted and unencrypted tiles, characterized by comprising:

means for, for a plurality of partial encoded

data that constitute encoded data of a tile, arranging the partial encoded data toward a terminal in ascending order of priority in decryption, and storing basic decryption key information located at an uppermost layer of the image which has a hierarchical structure constructed by repeatedly forming one tile group from a plurality of adjacent tiles and another tile group from adjacent tile groups; and

means for, when information that designates partial encoded data to be decrypted is received from a client on the network, sequentially deriving decryption key information from the basic decryption key to a lower layer until reaching the designated partial encoded data of the designated layer and, when decryption key information for the corresponding partial encoded data is generated, notifying the client of the decryption key information.

16. A computer-readable storage medium characterized by storing the computer program of claim 15.